

ELECTRONIC DEVICE

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a portable electronic device comprising a body and a display portion which can be opened and closed with respect to the body.

2. Description of the Related Art

In recent years, many types of portable electronic devices have been on sale. Examples of portable electronic devices include portable computers and portable information terminals. Portable computers comprise a body and a display portion which can be opened and closed with respect to the body. There are cases where an accessory, such as a speaker or a microphone, needs to be mounted to such portable computers. In conventional computers, such accessories are used by placing them on a desk and connecting a connecting cord to the body of the conventional computers.

The display portion incorporates, for example, a liquid crystal display. However, nothing in particular is mounted to any of the external surfaces of the display portion.

Taking note of this fact, the present inventor et al. have discovered that required accessories can be removably mounted to external surfaces of a display portion.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide a portable electronic device which allows accessories to be removably provided at external surfaces, around the display screen, of the display portion.

To this end, according to the present invention, there is provided a portable electronic device comprising a body; a display portion which can be opened and closed with respect to the body; holding means for mechanically and removably holding an accessory; and electrically connecting means for electrically and removably connecting the accessory; wherein the holding means and the electrically connecting means are provided at an external surface, around the display screen, of the display portion.

By virtue of such a construction, an accessory can be mechanically and removably held by a holding means at, and, at the same time, electrically and removably connected by an electrically connecting means to an external surface, around the display screen, of the display portion.

Although not exclusive, in a preferred form of the present invention the amount of protrusion of the protruding electrically connecting terminal of the accessory may be smaller than the amount of protrusion of a protrusion of the accessory. In this case, the protruding electrically connecting terminal of the accessory protects the protrusion of the accessory.

Although not exclusive, in another preferred form of the present invention, an electrically or magnetically insulated cover may be provided to cover a protruding magnet of the accessory. This can prevent the protruding magnet from electrically or magnetically affecting other devices or members.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of an embodiment of the portable electronic device in accordance with the present invention.

FIG. 2 illustrates the embodiment of the portable device, showing the accessories to be mounted to the display portion of the portable electronic device of FIG. 1.

FIG. 3 illustrates the display portion and the right speaker of the portable computer.

FIG. 4 is a front view of the right speaker, being used as example of the speaker.

FIG. 5 is a rear view of the right speaker.

FIG. 6 is a side view of the right speaker.

FIG. 7 illustrates one of the protrusions of the right or the left speaker.

FIG. 8 is a plan view of the protrusions of the right or the left speaker.

FIG. 9 illustrates the positional relationship between one of the protrusions and an electronic terminal of the right speaker.

FIG. 10 illustrates in detail one of the protrusions (or the other protrusion) and the electrical terminal of the right or the left speaker.

FIG. 11 is a sectional view of one of the protrusions (or the other protrusion) of the right or the left speaker and one of the recesses (or the other recess) in the right or the left side of the display portion.

FIG. 12 illustrates a form of the holding means, which shows one of the recesses (or the other recess) in the right or the left side of the display and one of the protrusions (or the other protrusion) of the right or the left speaker.

FIG. 13 illustrates another form of the holding means, which shows one of the recesses (or the other recess) in the right or the left side of the display and one of the protrusions (or the other protrusion) of the right or the left speaker of FIG. 12, as viewed from a different angle.

FIG. 14 illustrates still another form of the holding means, which shows one of the recesses (or the other recess) in the right or the left side of the display and one of the protrusions (or the other protrusion) of the right or the left speaker in accordance with the present invention.

FIG. 15 illustrates the recesses and the corresponding protrusions of FIG. 14 in a connected state.

FIG. 16 illustrates another form of accessory mounting in the electronic device of the present invention.

FIG. 17 illustrates still another form of accessory mounting in the electronic device of the present invention.

FIG. 18 illustrates still another form of accessory mounting in the electronic device of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

A description will now be given of preferred embodiments of the present invention with reference to the attached drawings.

Since the embodiments to be described below are preferred embodiments of the present invention, various specific technological forms are described below. However, unless otherwise specified, these technological forms in no way limit the scope of the present invention.

FIG. 1 illustrates an embodiment of the electronic device with hinges in accordance with the present invention. In FIG. 1, the portable computer 100 serves as the electronic device. The portable computer 100 comprises, for example, a body 2, a display portion 3, a keyboard 4, and hinges 1A and 1B surrounded by areas A and B, respectively.

The body 2 has the aforementioned keyboard 4, a pointing device 5, etc. A liquid crystal display (LCD) may be used for the display portion 3. Using the hinges 1A and 1B, the display portion 3 is mounted to the body 2 so that it can be